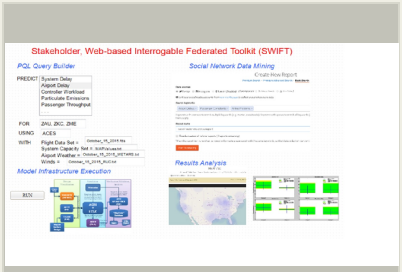
**Small Business Innovation Research/Small Business Tech Transfer**

# Stakeholder Web-based Interrogable Federated Toolkit (SWIFT), Phase I

Completed Technology Project (2016 - 2016)

## Project Introduction

The chief innovation is the development of a Predictive Query Language that populates databases with future information provided from aviation models, along with integration to social media networking to augment research, with an overarching web-based system for finding and generating aviation-oriented research questions. The innovation is intended to aid stakeholders in their analysis of current trends and future concepts, and to show its utility we propose using the toolkit to investigate the Trajectory-Based Operations concept, in particular how the future state of the NAS as predicted by the federated models will be different with TBO than without it. NASA is interested in enhancing system capacity by using existing aviation assets more efficiently or by expanding capacity through new technology or smart infrastructure planning. One aspect that is key to this idea is the involvement of the stakeholders, in particular the airlines and the traveling public. Stakeholder involvement is key to many FAA programs, and stakeholders are often represented during NASA programs. Increasing stakeholder involvement, and including the traveling public in some of the projects, will help focus NASA research energy towards high-impact areas that are likely to result in earlier concept implementation. In addition, NASA is interested in using existing models more effectively, allowing past investment on models to yield future returns. The proposed PQL is a large step in that direction. The proposed SWIFT program enables answering vital questions about existing projects as well as providing the stakeholder involvement to enhance new projects. The concept is to integrated existing models and insights from social media into a web-based tool that allows stakeholders (including NASA) to ask and answer 'what if' questions about various topics easily and conveniently. The insights provided by the answers will help guide stakeholder decision making.

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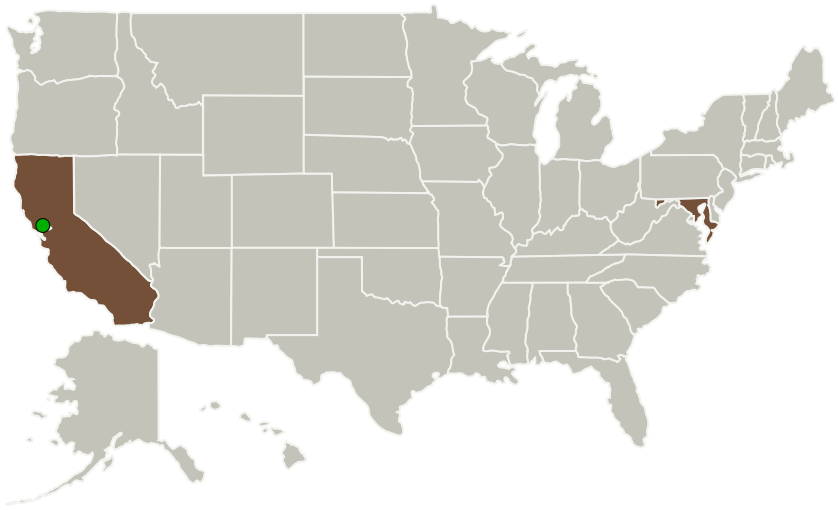
## Primary U.S. Work Locations and Key Partners



| Organizations Performing Work | Role | Type | Location |
|---|---|---|---|
| Intelligent Automation, Inc. | Lead Organization | Industry | Rockville, Maryland |
| Ames Research Center(ARC) | Supporting Organization | NASA Center | Moffett Field, California |

| Primary U.S. Work Locations | |
|---|---|
| California | Maryland |

## Project Transitions

**June 2016:** Project Start

**December 2016:** Closed out

**Closeout Documentation:**

- Final Summary Chart*(https://techport.nasa.gov/file/140922)*

## Organizational Responsibility

**Responsible Mission Directorate:**

Space Technology Mission Directorate (STMD)

**Lead Organization:**

Intelligent Automation, Inc.

**Responsible Program:**

Small Business Innovation Research/Small Business Tech Transfer

## Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

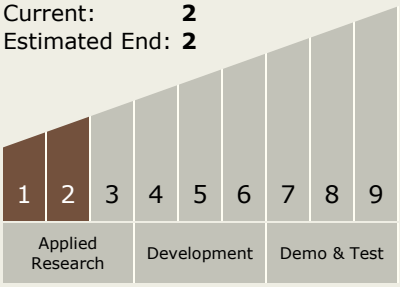
Carlos Torrez

**Principal Investigator:**

Frederick Wieland

## Technology Maturity (TRL)

Start: **1**
Current: **2**
Estimated End: **2**



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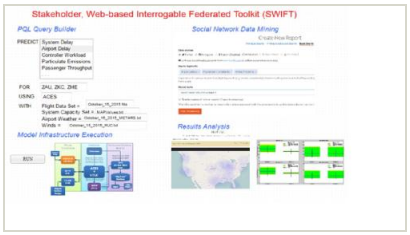
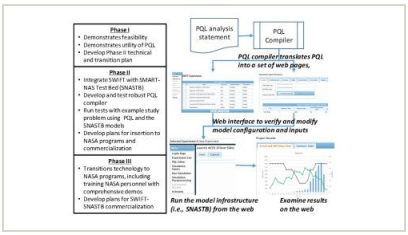
## Images




**Briefing Chart Image**
Stakeholder Web-based Interrogable Federated Toolkit (SWIFT), Phase I
*(https://techport.nasa.gov/image/127317)*




**Final Summary Chart Image**
Stakeholder Web-based Interrogable Federated Toolkit (SWIFT), Phase I Project Image
*(https://techport.nasa.gov/image/136375)*

## Technology Areas

**Primary:**

- TX15 Flight Vehicle Systems
  - TX15.1 Aerosciences
    - TX15.1.3 Aeroelasticity

## Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System